

This experience confirmed my belief that all children and young people are able and keen to achieve far beyond their parents' and even their own expectations if they are taught in a non-competitive and encouraging environment

## **The brilliant and the ordinary**

**BRILLIANCE AND EXCELLENCE CAN TAKE ON MANY** forms, and most people would know somebody they consider to be brilliant, gifted, talented, or simply really good at what they are doing. Unfortunately, most people think they could never match that level of achievement and take refuge in the comforting idea that only a few can be so successful.

High achievers seem to have some special advantage which propels them far beyond anybody else's level. On top of all that, they often even seem bold enough to enjoy what they are good at – they insist on doing only what they enjoy, which is something many people feel uncomfortable with. Depending on what other social and communication skills achievers bring with them, our response to them can range from respect to resentment, tinted with a little jealousy.

I don't believe that anybody who happens to develop better than average skills in any task is in any way advantaged from the start, but some people just seem to have better opportunities to make the best use of what they bring with them. To me, innate, genetic factors are of little significance for developing abilities to the highest possible level. Innate factors might well influence our temperament or personality but never in a rigid, inflexible way. Development and change can always be achieved by choice and the decision to make use of an opportunity.

Many people described as geniuses have told us that the mind is capable of achieving much more if a person is provided with the freedom to focus and concentrate on a particular task and the opportunity, encouragement and support to give one's full energy to it.

Young children do exactly this. They take the freedom to concentrate fully on what ever they are doing at any par-

ticular moment for as long as it takes for something else to grab their attention. Their desire to discover and learn new things is so great that many parents have set out deliberately to create a 'genius'. But one must always keep in mind that there is a very fine line between helping children and desperately wanting them to achieve and to live in their reflected glory. Pushy and pressuring parents can have a very destructive and unhealthy influence.

Parents or caregivers will always have the most influence on a growing child but I believe children themselves should be able to dictate their hunger for learning and the parents' task should be to support them along the way and try not to hold them back. Parents know their child better than anybody else and the basic trust children and parents have for each other is the best basis for a supportive relationship, free of pressure and obligations.

But even if we all decided to support our children and provide more opportunities for the next generation, parents should not have any preconceived ideas about what the child should be able to do. Even if all children receive more encouragement and freedom to learn, there will still be differences in the pace of their progress and the activities they prefer. I think parents should work with their children, keep an open mind and take whatever time it takes to discover their child's gift, rather than determine that the child should be accelerated and work towards a specific goal.

Until recently, excellence was measured through tests based mainly on what we describe as intelligence. Despite the fact that most people could probably describe intelligence only with very vague terms, most of the assessment of children's capabilities was based on IQ tests. Later definitions of giftedness include areas such as creativity and task commitment or perseverance and motivation, but still assume an innate difference in children's capability. Most of what we consider as gifts and talents, however, is based on our current attitude towards the particular task achieved rather than any special abilities of a child. If we place high value on academic achievement, or regard it as very desirable when young to be talented in sports, music or any other area, then

we will think that somebody who can do that is 'gifted'. Definitions and methods of identifying those who are gifted will continue to change and I will always feel uncomfortable with the idea of separating children into groups reflecting their level of performance. I would prefer to give as much support as possible to each individual while *disregarding* their special interests and qualities.

What we measure as intelligence has not much to do with the potential of a child to enjoy and achieve in later life. Many people regarded as highly intelligent when they were young still end up in destitution as adults. On the other hand, there are all the anecdotes about Albert Einstein failing miserably at school. Intelligence and later achievement are far from perfectly correlated: more essential qualities for achievement are self-confidence and freedom from feelings of inferiority, as well as persistence or 'stickability'. Together with a generally high motivation and drive to discover new things, these qualities are even more important than prior knowledge or experience.

Mathematics, at least in the school text books I teach from, always has the aspect of solving a puzzle knowing that there definitely is an answer. The sense of achievement and satisfaction is very high in mathematics because successfully solving a problem is somehow immaculate and pure. Nobody can unfairly criticise a correct answer!

If children were introduced to maths in a supportive environment their experience of the subject would be only positive. Each of their tasks would have a definite solution and thus always a final goal. Although there might be several ways of approaching the problem, each step they took would get them either closer to the result or provide further hints as to the next move. A supportive parent or teacher would discuss the chosen pathway of solution, rather than just determine whether the step was right or wrong. Children would learn a higher degree of self-determination and could perform real choices – all of which is very motivating for a child.

Intellectual activity can be especially rewarding if it is guided by somebody more experienced, and as long as the mentor or teacher avoids putting the children down it will

develop their independence. Maths is highly objective and allows for almost no argument over the results. Many of our negative school memories go back to English essays or analyses of some question in history which we submitted proudly only for the teachers to mark according to their own prejudices. Mathematics is a 'safer' subject in the sense that it gives a child the opportunity to receive unconditional praise.

Even parents who feel unable to help their children are probably best qualified to support them in developing self-determination and independence. However, excellence in any task should never be pursued just for the sake of achieving beyond the average, but must be seen as an enrichment of the child's future life. It therefore also has to go hand in hand with experiencing and learning other skills that foster acceptance within the child's peer group. For us, humility, modesty and helpfulness have always been very important qualities which we wanted to instil in our children from early on. We wanted them to use their skills to help others rather than feel superior.

Although recent findings by educationalists indicate that all children can be accelerated and can acquire certain valuable and basic skills much earlier than most normally do, still many parents and teachers often hesitate because they are not sure whether the advantages outweigh possible unforeseen disadvantages. What is the point of accelerating children if they are likely to encounter hostility and envy, or perhaps suffer early burnout and isolate themselves from their natural environment and friends?

To me, all these fears are only relevant if support and acceleration was only available to a small group of children who would not be allowed to pass on any of their knowledge and achievements. The prime emphasis for us was always to give each child a chance of developing as far as they can go towards a happier learning. I often feel it is still ideologically unfashionable to defend the notion that children can be given a happy head start, but the evidence we have seen through our own and other children shows that most young achievers live fulfilling lives and are happier than those who constantly fear and experience failure. Early achievement

makes children more independent, purposeful and positive and just as well socialised as others.

Skills developed early should not be overly attributed to a child's innate mental activities or abilities. I often come across the misconception that children who read earlier, faster and easier or comprehend maths earlier and better are somehow 'brighter' than others. This belief is often held all the more strongly because nobody in the family made any conscious effort to teach the child, and it seems that all the special skills simply developed naturally. But perhaps the early readers had the advantage that their parents, often unwittingly, taught them to distinguish between sounds, taught them about words and the written language by talking about it and thus created an atmosphere of expectancy and curiosity. They may have given their children something to look forward to when they finally learned to read books. Without realising it, the parents gave their children a head start when they first approached more formal reading lessons.

The same advantages can be achieved in maths, and any other topic or subject, with similarly striking results, which often misleads people into believing there is some sort of special talent at work. In maths, the concepts of quantity, size, space and shape are easy to introduce early and will give a child an advantage when it enters the school system. If the introduction to a subject happens informally and unintentionally, many parents are not aware of the advantage they have given their child and are later surprised to see more confident and competent performance at related tasks.

I would say it is within the means of any parent with time, care and patience to give their children the kind of early start in life that will vastly increase their child's chances of becoming a well balanced, able and happy young person who will also have learned to deal with negative experiences and hostile reactions from others, without being arrogant. It is important, however, to prepare them for these negative reactions in a way which helps them to understand the origin of envy, jealousy and rejection.

We always encouraged our children to help others and to pass on their knowledge or understanding. I could never see

much sense in simply accumulating knowledge or learning new concepts just for the sake of being better or faster than others. Unfortunately, this competitive aspect of learning is still widespread, and many parents' ideas about accelerating their children derive from the ambition to better others.

Although our children achieved certain goals and levels of knowledge earlier than others, they were always aware of the fact that anybody was capable of doing the same and they were happy to help anybody who struggled. David was more popular than I was with many of our students because he was so good at making children feel they could catch up with him. And many did so without wasting any time doubting their ability. Because of my own focus on maths, our children also needed other teachers to coach them in all the other subjects needed for school certificates and university entrance, and they learned that their own knowledge could always grow and be extended. They also discovered how important it was to share knowledge and to keep an open mind about any subject or idea.

In the classroom, it should be just as important to support children's own confidence in their abilities and skills. But with groups the size of today's average class it is undeniably difficult to give the same attention and support to each child, and many will miss out on the early encouragement they need.

Most schools also work on the principle that there is a common goal to be achieved by as many children as possible each year. While support programmes exist for those who struggle, far fewer schools offer support for those who could do more or are keen to investigate subjects in more depth. Personally, I think we should make an effort in offering individual support to all children and allow them to move through material at their own pace – even to a certain extent selecting their own material. Children who work on a subject they are really interested in, even if this means they spend some time working outside the curriculum, have the best chances of developing good basic learning skills which will make all future learning easier.

Yet all these issues come up long before a child enters

school and parents have to decide how much they want to support their children's development and how they can balance their influence with each child's temperament and preferences.

A study into a group of extremely competent young musicians found that none of the children showed any early signs of special or unusual ability. In most cases it was parental support that made all the difference. The results of this study did not surprise me. Our own children also never really stood out as youngsters until they developed a passion for their subject and decided to give it a lot of their energy. We introduced them to maths and many other activities and they determined how much time and energy they would devote to each of their interests. Our encouragement was always there, whether they asked for more and new information, or for someone to play a game of table tennis. Neither innate talents nor parents with high expectations will enable a child to achieve what a supportive home environment can do.

But even if we provide optimal early childhood opportunities and conditions, children will differ in their interest, self-motivation and general attitude towards learning and achievement. And of course, in almost any society there will be some sort of ranking order for the various abilities and specialities, and derived from that are people's attitudes towards a particular achievement.

According to researchers who looked into the historic context of attitudes towards high achievers in different task areas, this 'prestige hierarchy' has remained relatively stable for centuries. The highest level of recognition seems to be reserved for those who combine several rare skills and take on leadership roles. Creative scientists who consider the social and economic impact of their findings; political leaders who manage to incorporate the many facets of society into their thinking; determined and enthusiastic campaigners for a widely recognised cause and those who are able to filter vast amounts of information into something meaningful for the ordinary person, are ranked high on the scale of ability.

Compared with this, skills and interests in the creative

and artistic fields are considered more as a surplus by many people. Writers, musicians, painters and many other artists focus on skills that are not considered essential for the individual or a society to function and progress, but are still valued for the pleasure they can bring to those who develop them as well as those who enjoy the artists' products.

Less recognised or appreciated are skills at the extreme ends of the spectrum. Manual skills and the ability to maintain concentration at mundane tasks on the one hand, and very high or abstract fields like academic research on the other hand tend to be downplayed by people who see themselves in the 'middle ground'.

Many more skills and talents are often unappreciated or disdained. Performing calculations faster than a computer, speed reading and memory tasks are often regarded as gimmicks rather than special abilities and can earn the performer a range of responses.

Academic achievement is generally highly regarded but often met with a lot of suspicion when the high achiever happens to be a teenager. It smacks of elitism and as long as learning continues to be based on competitive principles, there will also be a difficulty in providing children with the necessary support to develop their skills.

Children who are lucky enough to live in a supportive and loving family will learn about this competitiveness as soon as they start school. Although things are changing in schools, there is still a lot of comparison between individual children and pressure to work towards a common goal. Whoever gets there faster or more easily is regarded as more intelligent. If we are serious about closing the gap between the successes and failures, we need to look first of all at the competitive concept of learning. This comes with the implication that achievement of a certain task will earn more recognition and acknowledgment than in other areas which might be more attractive for a particular child and come more naturally.

Although schools and education departments are trying their best to incorporate as many opportunities as possible, many children are still having a miserable existence at school



and, despite their potential to develop interests and desire to achieve, they become increasingly convinced to be a failure simply because their passions might lie outside the range of school subjects.

I have many students come to me for remedial maths because maths is the subject where their failure is most obvious and where they feel most intensely inadequate. It is a very common experience for me to start with students who have been through years of difficulty at school, experiencing failure in tests, rejection from classmates and the ridicule of teachers. All that just because they failed to develop an interest in the general school subjects, failing more obviously in maths than in other subjects because it is a less permissive subject, but mainly because they never received any encouragement for things they could do well.

Although mathematics is often the last thing they are genuinely interested in, it has also been the most frightening and often disabling subject and they feel unable to develop new skills or tackle new challenges without first resolving the problem in maths. So let us look at the mysterious task of teaching mathematics, a subject which seems to present some of our children with unconquerable difficulties.

## **What's the secret?**

MANY PARENTS AND TEACHERS WILL BE CURIOUS to hear the details and secrets of my method, Rapid Mathematics. Yet, reading this chapter, some readers will be reminded of their own good intentions and commonsense approaches. If there really is any great 'secret' to my method, it is to find the energy to follow your good intentions consistently and never become impatient.

My approach to teaching has evolved over twenty years' work with children from pre-school to university entrance level and is still being further refined. It is not based on textbooks or scientific findings about early childhood development. I rather look at it as something that I began by pure chance and developed gradually over the years.

A few basic principles crystallised out, but even these should not be regarded as hard and fast rules – they are mere guidelines and will need further adjustment for each individual.

A good way to start teaching a child is to actually *believe* in their potential to progress, develop and acquire skills. This might sound like a rather obvious statement but I am sure everybody will remember some encounter with somebody who managed to undermine our confidence to do something just by not believing in us. Children often have the ability to sense this in adults.

You should work from the premise that all children can understand even complicated concepts if they have the time and encouragement to keep going. My belief in my children and students comes quite naturally simply because I have no reason to assume otherwise.

A balanced mix of encouragement to recognise and appreciate children's natural motivation, and regular doses of satisfaction applied through little successes along the way, may sound a simplistic recipe for fostering high achieving. But I believe these principles are basic for creating an environment in which children, and adult learners, will develop to their highest potential. And they are too easily neglected under mounting pressure.

### **How we started**

David was seven years old when we started regular sessions after school. We first practised what he did at school at that time – basic sums and subtractions. Initially, I didn't think of extending him but he was quick to pick up new things and we simply moved on to successive chapters in his textbook. I trusted my intuition to tell me the right pace, to skip topics or exercises whenever I felt David understood the concept, and to encourage him enough to stay motivated.

Because I had a working knowledge of maths, I knew how to move rapidly through the book without boring David or demanding too much of him. We only did a few exercises, which never took longer than half an hour unless he really wanted to do more. I watched him very closely and, when